

REMARKS

Reconsideration of the application is respectfully requested.

1. The Examiner has rejected claims 1-4, 6-9, 11 and 13-16 as being obvious in light of JP 7-6778 in view of Wilkinson et al., US Patent No. 6,096,448 (the "Wilkinson reference"). With respect, it is submitted that the teachings of these two references cannot be combined, and one skilled in the art would not be motivated to combine the teachings of these two references.

The present invention relates to a fuel cell system which temporarily reverses cell voltage, by the application of an external power source, in order to protect the anode from oxidation. Reversal of the cell voltage is acceptable because the cell is preferably a solid oxide fuel cell.

The teachings of the Wilkinson reference cannot be applied to a solid oxide fuel cell. The Wilkinson reference deals only with solid polymer electrochemical fuel cells (see column 1, lines 19-26) otherwise known as polymer exchange membrane (PEM) fuel cells. A significant difference between SOFCs and PEMFCs is that the latter operates at much lower temperatures, less than 80° C. The choice of electrolyte and electrode materials are obviously significantly different.

The teachings of Wilkinson cannot be applied to the present invention because a PEM fuel cell cannot tolerate reversals of cell voltage:

"Momentary instances of slight cell reversal may not damage the fuel cell, but prolonged cell reversal or large negative cell voltages can cause permanent damage." [column 7, lines 27-30]

Whereas in the present invention, it is the purpose of the invention to create prolonged cell reversal or large negative cell voltages for the purpose of protecting the integrity of the anode.

Therefore, a person skilled in the art could not combine the teachings of Wilkinson with JP 7-6778 as they relate to fundamentally different types of fuel cells, with fundamentally different

properties. One such property, the ability to tolerate reversed cell voltage, is a critical element of the present invention. Therefore, there cannot be a *prima facie* case of obviousness in view of these two references.

Furthermore, in the Wilkinson reference, as well as in the JP 7-6778 reference, the methods and systems described relate to the periodic rejuvenation of the anode from oxidation or catalyst poisoning. In the present invention, the methods and systems claimed relate to prophylactic methods of preventing anode damage from oxidation. In other words, the references selected by the Examiner relate to treatment of a condition, whereas the present invention relates to prevention of the condition. Treatment does not necessarily teach one skilled in the art the solution of prevention. Again, it is submitted that a *prima facie* case of obviousness does not exist in view of these two references.

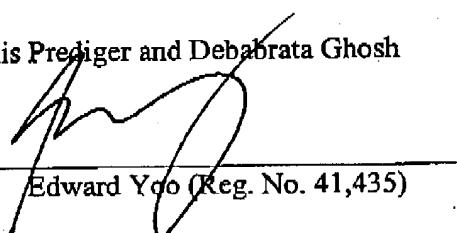
CONCLUSION

In view of the foregoing remarks and amendments, it is respectfully submitted that this application is in condition for allowance and allowance thereof is respectfully requested.

Respectfully submitted,

Dennis Prediger and Debabrata Ghosh

By:


Edward Yoo (Reg. No. 41,435)

CORRESPONDENCE ADDRESS:
CUSTOMER #22828